

**CLAIMS**

1. A picture coding method for predictively coding a picture with reference to pictures obtained from pictures coded and decoded, the method comprising:

5 a filtering step of performing filtering processing on a decoded picture;

a first determination step of determining a filtered picture as a reference picture, out of two pictures: a filtered picture and an unfiltered picture, said filtered picture being a filtered decoded picture and said unfiltered picture being said decoded picture; and

10 a second determination step of determining an unfiltered picture as an output picture out of the two pictures.

2. The picture coding method according to Claim 1, further comprising:

15 a first storage step of storing the filtered picture in a memory as a reference picture; and

a second storage step of storing the unfiltered picture in the memory as an output picture.

20 3. The picture coding method according to Claim 2, further comprising a releasing step of releasing a memory area storing a reference picture which is no longer used for reference, said reference picture being among the reference pictures stored in the memory.

4. The picture coding method according to Claim 3, wherein in the releasing step, when a reference picture becomes a picture which is no longer used for reference, an area storing the reference picture is released.

5. The picture coding method according to Claim 3,

wherein in the releasing step, when a reference picture becomes a picture which is no longer used for reference, an area storing the reference picture is released in a case in which an output picture is already outputted, said reference picture and  
5 output picture being originated from one decoded picture.

6. The picture coding method according to Claim 1, further comprising a coding step of coding identification information indicating which of the unfiltered picture and the filtered picture is  
10 to be determined as an output picture.

7. A picture decoding method for predictively decoding a picture with reference to a picture obtained from decoded pictures, the method comprising:

15 a filtering step of performing filtering processing on a decoded picture;

a first determination step of determining a filtered picture as a reference picture, out of two pictures: a filtered picture and an unfiltered picture, said filtered picture being a filtered decoded  
20 picture and said unfiltered picture being said decoded picture; and

a second determination step of determining an unfiltered picture as an output picture out of the two pictures.

8. The picture decoding method according to Claim 7, further  
25 comprising:

a first storage step of storing the filtered picture in a memory as a reference picture; and

a second storage step of storing the unfiltered picture in the memory as an output picture.

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9. The picture decoding method according to Claim 8, further comprising a releasing step of releasing a memory area storing a

reference picture which is no longer used for reference, said reference picture being among the reference pictures stored in the memory.

- 5 10. The picture decoding method according to Claim 9,  
wherein in the releasing step, when a reference picture becomes a picture which is no longer used for reference, an area storing the reference picture is released.
- 10 11. The picture decoding method according to Claim 9,  
wherein in the releasing step, when a reference picture becomes a picture which is no longer used for reference, the area for the reference picture is released in a case in which an output picture is already outputted, said reference picture and output  
15 picture being originated from one decoded picture.
12. The picture decoding method according to Claim 7, further comprising a decoding step of decoding identification information indicating which of the unfiltered picture and the filtered picture is  
20 to be determined as an output picture,  
wherein in the second determination step, an output picture is redetermined according to the decoded identification information.
- 25 13. A picture coding apparatus for predictively coding a picture with reference to pictures obtained from pictures coded and decoded, the apparatus comprising:  
a filtering unit operable to perform filtering processing on a decoded picture;  
30 a first determination unit operable to determine a filtered picture as a reference picture, out of two pictures: a filtered picture and an unfiltered picture, said filtered picture being a filtered

decoded picture and said unfiltered picture being said decoded picture; and

a second determination unit operable to determine an unfiltered picture as an output picture out of the two pictures.

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14. A picture decoding apparatus for predictively decoding a picture with reference to pictures obtained from decoded pictures, the apparatus comprising:

10 a filtering unit operable to perform filtering processing on a decoded picture;

a first determination unit operable to determine a filtered picture as a reference picture, out of two pictures: a filtered picture and an unfiltered picture, said filtered picture being a filtered decoded picture and said unfiltered picture being said decoded picture; and

15 a second determination unit operable to determine an unfiltered picture as an output picture out of the two pictures.

15. A program causing a computer to execute either the picture coding method according to Claim 1 or the picture decoding method according to Claim 7.

16. A stream which includes coded pictures, the stream comprising:

25 a coded picture obtained by predictively coding a filtered picture, as a reference picture; and

identification information indicating which of an unfiltered picture and a filtered picture is to be determined as an output picture, said filtered picture and unfiltered picture being originated from one decoded picture.

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